

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
11 March 2004 (11.03.2004)

PCT

(10) International Publication Number  
WO 2004/021447 A1

(51) International Patent Classification<sup>7</sup>: H01L 29/786,  
21/336, G02F 1/1368, G09F 9/00

(JP). NAKABAYASHI, Takaya [JP/JP]; 1357, Kawanishi, Iga-cho, Ayama-gun, Mie 519-1425 (JP). OCHI, Hisao [JP/JP]; 2613-1, Ichinomoto-cho, Tenri-shi, Nara 632-0004 (JP). HARA, Takeshi [JP/JP]; 4-2-10, Midorigaoka, Heguri-cho, Ikoma-gun, Nara 636-0941 (JP). SAITO, Yuhichi [JP/JP]; 2613-1, Ichinomoto-cho, Tenri-shi, Nara 632-0004 (JP).

(21) International Application Number:  
PCT/JP2003/011057

(74) Agents: HARA, Kenzo et al.; HARAKENZO PATENT LAW FIRM, Daiwa Minamimorimachi Building, 2-6, Tenjinbashi 2-chome Kita, Kita-ku, Osaka-shi, Osaka 530-0041 (JP).

(22) International Filing Date: 29 August 2003 (29.08.2003)

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2002-255538 30 August 2002 (30.08.2002) JP  
2002-365337 17 December 2002 (17.12.2002) JP

(71) Applicant (for all designated States except US): SHARP KABUSHIKI KAISHA [JP/JP]; 22-22, Nagaike-cho, Abeno-ku, Osaka-shi, Osaka 545-8522 (JP).

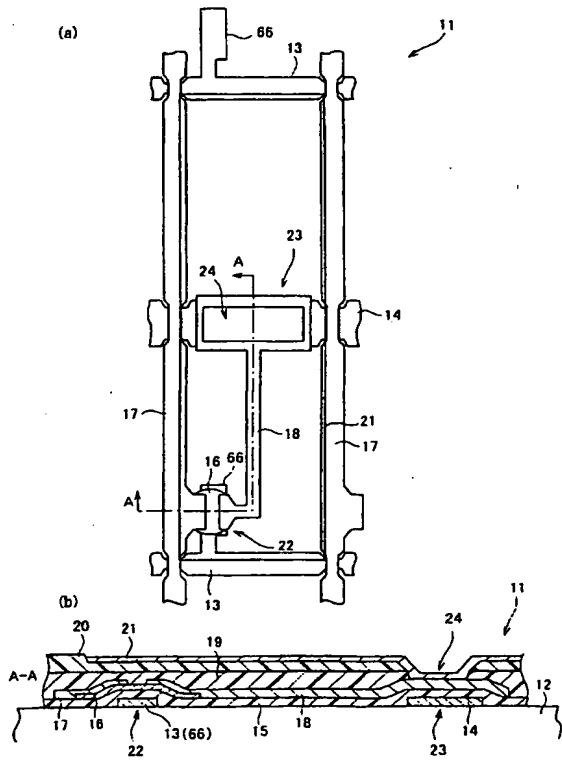
(72) Inventors; and

(75) Inventors/Applicants (for US only): FUJII, Akiyoshi [JP/JP]; 2-17, Sakyo 3-chome, Nara-shi, Nara 631-0801

[Continued on next page]

(54) Title: TFT ARRAY SUBSTRATE, LIQUID CRYSTAL DISPLAY DEVICE, MANUFACTURING METHODS OF TFT ARRAY SUBSTRATE AND LIQUID CRYSTAL DISPLAY DEVICE, AND ELECTRONIC DEVICE

(57) Abstract: A TFT array substrate includes a thin film transistor section in which a gate electrode is formed on a substrate, and a semiconductor layer is formed on the gate electrode via a gate insulation layer. The semiconductor layer of this TFT array substrate has a shape formed by dropping a droplet. Accordingly, it is possible to directly forming a semiconductor layer, or a resist layer for forming the semiconductor layer, by dropping a droplet(s). On this account, the present invention allows the use of an inkjet method, thus reducing costs and numbers of manufacturing processes.



WO 2004/021447 A1